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ABSTRACT

The purpose of the study was to identify and compare the learning style preferences of low-achieving and high-achieving young African-American males. Measures of perceptual preferences for 22 learning modalities were obtained from a sample of 50 ninth- and tenth-grade students. Half of the students were randomly selected from a pool identified as low-achievers, and the other half from a pool identified as high-achievers. The pools were identified based on grade averages in core academic courses. The Dunn, Dunn, and Price Learning Style Inventory was administered to each of the two groups. Independent t-test comparisons of mean raw scores on each of the learning modalities yielded only three significant differences between low and high achievers. High-achievers had stronger preferences for motivation and were more parent motivated than low-achievers. Low-achievers, however, had stronger preferences for learning experiences that involve opportunities for mobility. From the results of this study, one might conclude that young African-American males who are identified as either low- or high-achievers are more alike than they are different in their preferences for various learning modalities. (Author)

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LEARNING STYLE PREFERENCES OF LOW- AND HIGH-ACHIEVING YOUNG AFRICAN-AMERICAN MALES

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Abstract

The purpose of the study was to identify and compare the learning style preferences of low-achieving and high-achieving young African-American males. Measures of perceptual preferences for 22 learning modalities were obtained from a sample of 50 ninth- and tenth-grade students. Half of the students were randomly selected from a pool identified as low-achievers, and the other half from a pool identified as high-achievers. The pools were identified based on grade averages in core academic courses.

The Dunn, Dunn, and Price Learning Style Inventory was administered to each of the two groups. Independent t-test comparisons of mean raw scores on each of the learning modalities yielded only three significant differences between low- and high-achievers.

High-achievers had stronger preferences for motivation and were more parent motivated than low-achievers. Low-achievers, however, had stronger preferences for learning experiences that involve opportunities for mobility.

From the results of this study, one might conclude that young African-American males who are identified as either low- or high-achievers are more alike than they are different in their preferences for various learning modalities.

Learning Style Preferences of Low- and High-Achieving Young African-American Males

Across the United States, educators are concerned about the achievement of African-American and other minority children. Researchers studying the academic achievement of these students have typically compared African-Americans to European-Americans on static variables such as grades and standardized test scores (Pollard, 1989). Pollard recommended that researchers should shift their focus to the identification of variables that might be altered to improve minority students' achievement. The need for identification of alterable variables is especially pronounced as it applies to African-American males, thought by some to be "an endangered species" (Parham & McDavis, 1987).

African-American Males: An At-Risk Population

In recent years, African-American males in the United States have been described as a population at risk. This label is supported by statistics such as those quoted by Parham and McDavis (1987) in their review of related studies. They reported unemployment rates of 28% to 30% among African-American men and up to 48% among African-American youth. They also reported that 42% of the inmate population and 42% of all homicide victims are African-Americans.

Ghee (1990), likewise, supported the appropriateness of an at-risk label for African-American males. He reported that 44% of all murder victims and 48% of all those arrested on murder charges in the United States in 1986 were African-Americans. The victim in these cases was also African-American 95% of the time. The typical victim and assailant in such cases, according to Ghee, are African-American males between the ages of 18 and 24 who have both low socioeconomic and low educational status. He added that an African-American male who lives in a large city and does not go to college will be likely to encounter the criminal justice system by the age of 25.

The at-risk classification of African-American males, however, results from more than such staggering social statistics. Education-related data also raise concerns about the future of African-American males. Kunjufu (1987) reported that African-American children comprise only 17% of all public school students, but they comprise 41% of those placed in special education. He wrote that 85% of the African-American children placed in special education are males. From their review, Parham and McDavis (1987, p. 25) concluded that (1) African-American males tend to lag behind their majority peers in such key areas as academic achievements and development of positive self-concepts; (2) African-American children are suspended from school three times as often as their majority peers, and their suspensions are for longer periods; (3) African-American male students receive corporal punishment at rates that are higher than those for their peers; and (4) African-American males are tracked into slower classes at disproportionate rates, and their rates of college eligibility and attendance are among the lowest.

Circumstances such as these lead to an educational background that is devastatingly inadequate as a primary prerequisite for success in the labor market (Parham & McDavis, 1987). The consequences are readily apparent. Kunjufu (1987) reported that 31% of African-American males between the ages of 18 and 25 are unemployed. He also reported that they comprise only 3.5% of the total college population. Ghee (1990) argued that consequences such as these could be avoided by restructuring education, one of the most critical elements in upward mobility, in ways to facilitate meeting the special needs of African-American males.

Indeed, as Pollard (1989) emphasized, some African-American males are quite successful. She sought to identify alterable variables that might distinguish between low- and high-achieving poor minority students, both male and female. The results of her study indicated that self-perceptions of ability, parental influences, and active problem-solving strategies were significant factors that distinguished academic achievement of the two groups. Obviously, these categories identified by Pollard offer possibilities for consideration in restructuring education to facilitate academic achievement of African-American males. The use of personalized instruction that is based on knowledge of how individuals learn is another potential focus for such restructuring. This approach is regarded as a source of hope in reaching students who are classified at-risk (Kunjufu, 1987). To reduce the numbers of at-risk students, Kunjufu suggested designing instruction, an alterable variable, to conform to their learning styles. Implicit in this suggestion is the idea that learning styles distinguish between successful and unsuccessful students.

The Learning Styles Movement

Endorsing a personalized approach to education, the learning styles movement is based on the premise that individual learners differ in their characteristic responses to instruction (Brandt, 1990). These ways of responding are called learning styles. According to O'Neil (1990), learning styles are patterns of "cognitive, affective, and physiological behaviors that serve as relatively stable indicators of how learners perceive, interact, and respond to the learning environment" (p. 5).

Advocates of the learning styles approach believe that all students can learn if they are taught in ways that utilize their strengths (O'Neil, 1990). O'Neil noted that many of these advocates believe that "at-risk students . . . have the most to gain from style-based learning" (p. 5). The learning styles approach focuses on individual strengths as opposed to weaknesses. Teachers who follow a learning styles approach are less likely to attribute students' lack of academic success to an absence of ability (O'Neil).

According to Dunn, Dunn, and Price (1989), research supports the existence of relationships between academic achievement and learning styles. These authors reported that students do differ in the ways they learn, their performance is related to their personal learning styles, and achievement increases significantly when they are taught with approaches and resources that complement their unique learning styles.

The focus on learning styles benefits students not only with improved achievement, but in other ways as well. Hand (1990) stated that awareness of learning style allows students "to gain confidence in their strengths and to develop diverse strategies for coping with the challenging situations that inevitably arise" (p. 14). Jaouen (1990) added that children who are aware of style differences are more tolerant and helpful with one another.

Educators benefit from the learning styles philosophy in the areas of curriculum design and process. As a result of having explanations for individual differences in learning, educators can adapt instructional methods and curricula to reach more students. They can manipulate the learning environment to support individual differences and, as a result, will find their "classrooms disciplined by mutual respect" (Marshall, 1990, p. 62).

Creating an environment that fosters the benefits of the learning styles approach requires that learning styles preferences first be identified. The purpose of this study was to identify and compare the perceptual preferences of low-achieving and high-achieving African-American male students. Of particular interest were their preferences for auditory, visual, tactile, and kinesthetic learning modalities.

Method

Sample. Participants in this study were African-American males classified as freshmen and sophomores at a southern, urban high school during the fall semester of 1993. The school, one of two that served grades 9 through 12 in the city, had an enrollment of 1,375 students. Of this number, 51% were African-American, 45% were European-American, and 4% were other ethnicities. African-American males comprised 26% of the school's enrollment, but 55% of the special education placements, and were represented disproportionately among dropouts, absentees, and disciplinary referrals.

Of 454 freshmen and 335 sophomores in the school, 131 freshmen and 96 sophomores were African-American males. Thus, 227 students were potentially eligible for inclusion in this study. The target population, however, was limited to include only those eligible students who were defined, for the purpose of this study, as low and high achievers. Low achievers were eligible students, excluding those placed in special education, whose grade average was below 70 in core academic courses (English, science, history, and math). High achievers were eligible students, excluding those placed in special education, whose grade average was 80 or above in core academic courses. Of the 227 eligible students, 77 were identified as low achievers and 72 were identified as high achievers.

Target students who actually participated in the study included 25 low achievers and 25 high achievers. These participants were selected using a blind process where 25 names were randomly drawn from each pool of identified students. No attrition was experienced. Participation was voluntary with all participants giving their informed consent.

Instrumentation. Data were obtained by means of Dunn, Dunn, and Price's (1989) Learning Style Inventory (LSI) for Grades 5-12. The LSI yields information about the

patterns through which students prefer to learn. A machine-scorable paper-and-pencil instrument which can be read either silently by the respondent or orally by the examiner, the LSI usually takes an average of 20 to 30 minutes to administer. It consists of 104 statements for which respondents select from among five options ranging from strongly agree to strongly disagree, and it assesses individual learning preferences in 22 areas.

A standard score is calculated for each preference area, using a scale with a mean of 50 and a standard deviation of 10. A score of 60 or higher on any area indicates a high preference for that area, whereas a score of 40 or lower indicates a low preference. Scores between 40 and 60 indicate preferences that are neither high nor low, but represent areas that vary depending on the topic and situation of the learning (Dunn, Dunn, & Price, 1989).

Four preference areas--auditory, visual, tactile, and kinesthetic--as measured by the LSI (Dunn, Dunn, & Price, 1989) were the initial focus of this study. From the LSI manual, students with auditory preferences learn best when initially listening to an oral instruction such as lecture, discussion, or recording. The reliability coefficient for this area is .80, and the standard error of measurement is 2.22. Students with visual preferences can easily recall what has been read or observed. The reliability coefficient for this area is .79, and the standard error of measurement is 2.18. Students with tactile preferences need to underline as they read, take notes when they listen, and keep their hands busy. The reliability coefficient for this area is .77, and the standard error of measurement is 1.51. Students with kinesthetic preferences require whole-body movement and/or real-life experiences to absorb and retain material to be learned. The reliability coefficient for this area is .74, and the standard error of measurement is 2.40.

Data Collection and Analysis. The LSI (Dunn, Dunn, & Price, 1989) was administered by the first author to low achievers and high achievers in two separate groups. Respondents indicated their choices by blackening the appropriate bubbles on the LSI answer sheet. The examiner responded to questions about word meanings as the need arose among low achievers. The total testing time was 30 to 40 minutes per group.

Completed answer sheets, coded by group, were sent to Price Systems, Inc., the inventory distributor, for scoring. Both individual and group profiles were produced in the scoring process. Using the ABSTAT (1989) statistical program, mean raw scores were calculated for each preference area for both groups. Independent *t*-tests were used to ascertain whether significant differences existed between the perceptual preferences of low-achieving and high-achieving respondents.

Visual inspection of the individual profiles led to the post hoc hypothesis that some of the other preference areas, related to specific learning conditions, might also reflect important differences. Data for the other areas, therefore, were subjected to post hoc statistical analysis using the independent *t*-test.

Results

Hypothesis Testing. The study was designed to ascertain whether African-American male students who are academically unsuccessful differ from their academically successful peers in their perceptual preferences. Four null hypotheses, one related to each preference area, were generated and statistically analyzed using independent *t*-tests. The confidence level for rejection of each hypothesis was set at .05. Table 1 depicts a summary of the mean raw scores, standard deviations, *t*-values, and probability values for each of the four perceptual preference areas.

As can be observed from Table 1, none of the *t*-values were significant at the .05 level of confidence. Measured differences in the preferences for auditory, visual, tactile, and kinesthetic learning modalities held by low achievers and high achievers who participated in this study were not statistically significant.

Table 1
Independent *t*-Test Summary for LSI Perceptual Preferences

Perceptual Area	Mean	SD	*t*-value	*p*
Auditory Preferences				
Low	14.96	2.39	0.12	0.91
High	15.04	2.34		
Visual Preferences				
Low	8.52	2.74	1.56	0.12
High	9.72	2.69		
Tactile Preferences				
Low	17.04	3.77	0.91	0.37
High	18.00	3.71		
Kinesthetic Preferences				
Low	26.00	4.24	1.18	0.24
High	27.28	3.40		

*$p < .05$.

Post Hoc Analysis. The perceptual preference areas analyzed above represent only 4 of the 22 learning preference areas measured by the LSI (Dunn, Dunn, & Price, 1989). Visual inspection of the individual profiles led to the post hoc hypothesis that some of the other areas might actually reflect important significant differences. These data, therefore,

were also analyzed using independent t-tests. Results of these analyses indicated no differences significant at the .05 level of confidence.

Three areas, however, were significant at the .10 level. These areas were the nonperceptual learning conditions labeled Motivation ($p = .08$), Mobility ($p = .07$), and Parent Motivated ($p = .09$). According to Dunn, Dunn, and Price (1989), students with high motivation desire to achieve academically. The reliability coefficient for this area is .76, and the standard error of measurement is 2.28. Students with high mobility need frequent "breaks" and must move about the instructional environment. The reliability coefficient for this area is .85, and the standard error of measurement is 1.38. Students who are parent motivated want to achieve to please their parents or parent figures. The reliability coefficient for this area is .72, and the standard error of measurement is 1.52. Table 2 depicts the results of the analysis for these three areas.

Table 2
Independent t-Test Summary for LSI Preferences
in the Areas of Motivation, Mobility, and
Parent Motivated

Preference Area	Mean	SD	t-value	p
Motivation				
Low	32.92	5.13	1.79	0.08*
High	35.04	2.96		
Mobility				
Low	15.84	3.13	-1.80	0.07*
High	13.84	4.60		
Parent Motivated				
Low	17.32	2.00	1.72	0.09*
High	18.24	1.79		

*$p < .10$.

Summary and Discussion

This study was a comparison of the learning style preferences of low-achieving and high-achieving African-American males as measured by the Dunn, Dunn and Price (1989) Learning Style Inventory (LSI). The preferences for auditory, visual, tactile, and kinesthetic learning modalities were compared between low-achieving and high-achieving freshmen and sophomore students enrolled at a southern, urban high school in the fall of 1993.

Independent t-test analyses revealed no differences that were significant at either the .05 or the .10 levels. Based on these results, the perceptual learning preferences of low-achieving and high-achieving African-American male students appear to be more similar than different.

Comparison of the probability values, however, reveals some interesting differences. Of the four perceptual preferences, the visual area ($p = .12$) is the one that most nearly approximates significance, whereas the auditory area ($p = .91$) does not approach significance at all. These students, therefore, may prefer learning through visual means somewhat more than through auditory means.

Visual inspection of the individual profiles led to the post hoc hypothesis that differences might exist in some of the nonperceptual preference areas measured by the LSI (Dunn, Dunn, & Price, 1989). Independent t-test analyses revealed no differences that were significant at the .05 level of confidence. Differences in three areas were, however, significant at the .10 level. Trends toward significant differences were noted in the preferences for Motivation, Mobility, and Parent Motivated. Based on these trends, low achievers appear to have less desire for academic achievement and to be less interested in pleasing their parents or parent figures. Low achievers, however, appear to need more opportunity for change and movement within the classroom.

Unlike the results of Pollard's (1989) study, the results of this study fail to provide a clear mandate for educational practices that are linked to specific groups. Perceptual learning preferences did not clearly distinguish between low and high achievers. This finding may have significance for the argument, reported by O'Neil (1990), that "students from particular cultural backgrounds may be more likely to exhibit particular learning styles" (p. 8). Further study that is specifically designed to address the question of whether African-American males are characterized by a unique pattern of perceptual learning style preferences is needed.

Like Pollard's (1989) study, the results of the post hoc analysis in this study do provide indicators of some factors that might contribute to differences between low and high achievers. The observed trend in this study toward high achievers having a stronger desire to please parents and parent figures is consistent with Pollard's finding that parental influence was a strong factor in the success of high achievers in her study. Educators seeking to maximize the achievement of their African-American male students are well-advised to involve the students' parents or parent figures more fully than they have done in the past. Specifically, educators need to become better informed about and more supportive of these parents' educational aspirations for their children (Parham & McDavis, 1987).

The results of the post hoc analysis in this study also indicate that low achievers are somewhat less self-motivated than high achievers. Low achievers, in addition, seem to require more active involvement in their learning experiences. Perhaps these two findings are related to one another. Students who prefer mobility might be presumed to be less motivated to learn when their experiences deny them the desired opportunities for active

involvement. Further study is needed to ascertain whether motivation and mobility are, in fact, related factors in the academic success or lack thereof among African-American male students.

The reader is cautioned that generalizability of the results of this study is limited by the use of a small sample from a single school district. The measured learning style preferences reported herein should be considered representative of other African-American males only to the extent that similarities can be established. Further study is recommended with the population expanded to include representatives from other school districts in other geographic regions. The sample size also needs to be increased.

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